

**ABSTRACT****EFFECTIVENESS ALENDRONATE PELLET WHICH IS  
CROSSLINKED BY GLUTARALDEHYDE IN BONE DEFECT  
DUE TO FRACTURE OF OSTEOPOROSIS****Fitrotin Auliyah**

Osteoporosis is a bone disorder that is characterized by decreasing the density and strength of bone, disruption of bone architecture that may result in fracture. Osteoporosis occurs when there is an increase in bone resorption process that is far beyond the ability of osteoblast form new bone. Esterogen deficiency is one of events that can cause osteoporosis.

The objective of this research was to determine the effectiveness of pellet alendronate which is crosslinked by glutaraldehyde for the defect of fracture that caused by osteoporosis. The rats were ovariectomized on the 8<sup>th</sup> day after were adapted for 7 days, then drilling on the femur was 2.2 mm and then treated according to the group (Give pellet or not). After that, terminate them to take the femur at 6<sup>th</sup> week after drilling. Then, performed observation on the defect either radiologically and Haematoxylin-Eosin staining.

This study showed that Alendronate pellet which is crosslinked by glutaraldehyde has not been shown decreasing size defect. This effect might be due to has not been releases alendronate from the pellet or that is still very little apart, so there is no emphasis on resorption activity by osteoclast. Based on the measurement of bone cell count, it shown that alendronate pellet was crosslinked by glutaraldehyd had better bone growth, proven effective in assisting the process of closing the bone defect due to fracture of osteoporosis significantly.

**Keywords** : Alendronate pellet, crosslink, glutaraldehyde, osteoporosis